

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 6473

Joint Petition of Vermont Electric Power)
Company, Inc. and Green Mountain Power)
Corporation for a Certificate of Public Good)
authorizing: (1) VELCO to install its 50 MVA)
portable transformer at VELCO's Queen City)
Substation located in the City of South)
Burlington, Vermont; and (2) GMP to)
reconductor approximately 600 feet of existing)
34.5 kV line adjacent to the Queen City)
Substation)

Order entered: 4/11/2001

I. INTRODUCTION

This case involves a joint petition filed by Vermont Electric Power Company, Inc. ("VELCO") and Green Mountain Power Corporation ("GMP") on February 15, 2001, requesting a certificate of public good ("CPG") under 30 V.S.A. § 248(j) authorizing: (1) VELCO to install, by May 4, 2001, its portable 115/34.5 kv, 50 mva transformer at VELCO's Queen City Substation, located at the corner of Queen City Park Road and Central Avenue in the City of South Burlington, Vermont; and (2) GMP to reconductor the 600 feet of its existing 34.5 kv line which connects VELCO's Queen City Substation and GMP's Substation #32. Installation of the portable transformer by May 4, 2001, is necessary to minimize the risk of overloading VELCO's three 115/34.5 kv, 50 mva Chittenden County transformers (one located at its Queen City Substation and two at VELCO's Essex Substation) during the upcoming summer load period.

VELCO and GMP served the petition, prefiled testimony, proposed findings, and a proposed order (along with a prospective CPG) on the Public Service Board ("Board"), the Vermont Department of Public Service ("DPS"), and the Vermont Agency of Natural Resources ("ANR").

Notice of the filing in this docket was sent on February 26, 2001, to all parties specified in 30 V.S.A. § 248(a)(4)(C) and all other interested parties. The notice stated that any party wishing to submit comments as to whether the petition raises a significant issue with respect to the substantive criteria of 30 V.S.A. § 248 needed to file comments with the Board on or before March 30, 2001.

The DPS filed a letter with the Board on March 30, 2001. In its filing, the DPS does not oppose the proposed project and does not request a hearing, as long as its one recommended revision is included in the Discussion following finding 87. No objection to that recommendation has been received from VELCO (VELCO indicated to the DPS that it has no such objection) and the DPS recommendation has been so included.

The DPS also filed a Determination Under 30 V.S.A. § 202(f) on March 30, 2001. No comments were received by any other parties or interested persons.

Notice of the filing, with a request for comments on or before March 30, 2001, was published in the *Burlington Free Press* on March 2 and 9, 2001. No comments were received.

The Board has reviewed the petition and accompanying documents and agrees that, pursuant to 30 V.S.A. § 248(j), a CPG should be issued without the notice and hearings otherwise required by 30 V.S.A. § 248.

II. FINDINGS

Based upon the petition and its accompanying documents, the Board hereby makes the following findings in this matter.

Background

1. VELCO and GMP are each a company as defined by 30 V.S.A. § 201 and as such each is subject to the Board's jurisdiction pursuant to 30 V.S.A. § 203. Pet. at 1.
2. VELCO's offices are located at 366 Pinnacle Ridge Road, Rutland, Vermont 05701. Pet. at 1.
3. GMP's offices are located at 163 Acorn Lane, Colchester, Vermont 05446. Pet. at 1.
4. VELCO owns and operates most of the high voltage electric transmission system in the State of Vermont, including transmission facilities that serve Chittenden County and northwestern Vermont. Pet. at 2.

5. VELCO plans for the maintenance, upgrade and expansion of the State's transmission system to assure the adequacy of the system to transmit bulk power to the electric utilities in Vermont. Pet. at 2.

6. Currently, VELCO's transmission system in Chittenden County consists of a 115 kV network that is part of the bulk power grid which terminates at VELCO's East Avenue, Queen City and Essex Substations. From these three substations, both GMP and the City of Burlington Electric Department ("BED") operate distribution networks that deliver electric service to the Cities of Burlington, South Burlington and surrounding areas. Pet. at 2.

7. VELCO delivers power to BED's 13.8 kv subtransmission system at VELCO's Queen City and East Avenue Substations via a single, 50 MVA, 115/13.8 kv transformer at each site. VELCO Panel pf. at 3.

8. VELCO delivers power to GMP's 34.5 kv subtransmission system by means of one 50 MVA, 115/34.5 kv transformer at its Queen City Substation and two 50 MVA, 115/34.5 kv transformers at its Essex Substation (these three transformers to be referred to as the "Chittenden County Transformers"). Both BED's and GMP's subtransmission systems then connect to distribution substations or bring power directly to the customers via stepdown transformers. VELCO Panel pf. at 3-4; VELCO Exh. DMJ-4.

9. In this proposed project, VELCO and GMP seek a certificate of public good under 30 V.S.A. § 248(j), authorizing (1) VELCO to install, by May 4, 2001, its portable 115/34.5 kv, 50 MVA transformer as a second source at VELCO's Queen City Substation; and (2) GMP to reconductor the 600 feet of its existing 34.5 kv line that connects VELCO's Queen City Substation to GMP's Substation #32. Pet. at 2-3.

Project Description

10. VELCO's Queen City Substation is located on the corner of Queen City Park Road and Central Avenue in the City of South Burlington, Vermont. To the east of the substation, across Vermont Railway's railroad tracks, is the Champlain Water District's water treatment facility. To the north, across Queen City Park Road, are the General Dynamics plant and other industrial businesses. To the west, across Central Avenue, is Red Rocks Park. To the south is the Queen

City Park residential area. This residential area overlooks Lake Champlain. VELCO Panel pf. at 12.

11. The VELCO Queen City Substation yard is well screened on all sides from existing roads and neighbors. Boyle pf. at 2; VELCO Exhs. TJB-2, 3A, 3B, 3C.

12. As previously mentioned (See findings 6, 7, and 8), the existing VELCO Queen City Substation is the terminal for one 115 kv circuit that is part of the bulk power grid. The substation contains one 115/13.8 kv stepdown transformer connected to BED's network, and one 115/34.5 kv stepdown transformer (one of the three Chittenden County Transformers) connected to GMP's network (GMP Queen City Substation No. 32). VELCO Panel pf. at 12.

13. VELCO proposes to install its portable 115/34.5 kv, 50 MVA transformer near the existing 115/34.5 kv step-down transformer located at the southeast corner of the VELCO Queen City Substation. The proposed project will not require any changes to the existing VELCO Queen City Substation fence. VELCO Panel pf. at 12; VELCO Exhs. DMJ-8, DMJ-9, and DMJ-10.

14. VELCO also proposes to install a 115 kv circuit breaker, a 115 kv disconnect and control package (recently used for the synchronous condenser located at the VELCO Sandbar Substation), plus a 34.5 kv circuit breaker, a 34.5 kv disconnect, and two strain bus structures for making the tie from the proposed portable transformer installation into the existing 34.5 kv line to GMP's #32 substation. VELCO Panel pf. at 12-13; VELCO Exhs. DMJ-8, DMJ-9, and DMJ-10.

15. The feed for the proposed portable transformer installation will be tapped off of the existing incoming 115 kv circuit. The tap will travel through a 115 kv disconnect switch, then to a 115 kv breaker, and finally into the portable transformer. The 34.5 kv side of the portable transformer will then tie into a 34.5 kv bank breaker through a set of disconnects and onto a strain bus. The strain bus will be supported by 34.5 kv wood transmission structures that will be similar to the existing structures that carry the existing 34.5 kv line over to GMP's Queen City No. 32 Substation. The protection package will be installed in the existing control building. VELCO Panel pf. at 13-14; VELCO Exhs. DMJ-8, DMJ-9, and DMJ-10.

16. Because this proposal is a temporary installation, all equipment will be supported by pressure treated timbers; no concrete foundations will be poured. VELCO Panel pf. at 14.

17. VELCO will install its typical fluid containment system under the proposed portable transformer installation. VELCO Panel pf. at 14; VELCO Exh. DMJ-11.

18. PVC conduit will be installed from the existing control building to the circuit breakers and portable transformer to accommodate control cables. All equipment will be grounded to the existing ground system. VELCO Panel pf. at 14.

19. The existing 600 feet of GMP's 34.5 kv line which connects VELCO's Queen City Substation to GMP's Queen City Substation #32 must be reconducted, because the wire is too small to carry the current that would flow in the event that both 115/34.5 kv transformers are energized. The existing 556 mcm aluminum conductor steel reinforced ("ACSR") will be replaced with 954 mcm ACSR on GMP's poles within the existing right-of-way. VELCO Panel pf. at 13.

20. In addition, to obtain the necessary clearances, GMP proposes to replace one existing pole and install one new pole outside the fence, but within the existing right-of-way. The proposed new poles will be within a foot or two of the height of the existing ones, approximately twenty-five feet above the ground. VELCO Panel pf. at 13.

Orderly development of the Region

[30 V.S.A. § 248(b)(1)]

21. The proposed project will not unduly interfere with the orderly development of the region, with due consideration having been given to the recommendations of the municipal and regional planning commissions, the recommendations of municipal legislative bodies, and the land conservation measures contained in the plan of any affected municipality. This finding is supported by findings 22 through 27, below.

22. The proposed project falls within the jurisdiction of the Chittenden Regional Planning Commission. One of the goals in the energy area is to "ensure that an adequate supply of reasonably priced energy, of all environmentally responsible forms, is available to meet the Region's future need and to minimize environmental degradation associated with energy supply and use." VELCO Exh. DMJ-12, at 24.

23. The City of South Burlington Comprehensive Plan specifies that future planning for public utilities shall "[m]aintain the quality of existing utilities or services and remedy recognized deficiencies." VELCO Exh. DMJ-13, at 74.

24. The proposed project complies with these goals. Installation of a portable transformer at VELCO's Queen City Substation is necessary to maintain the quality of existing electric service (see findings 29-46, below). The proposed project is being undertaken in order to avoid transmission outages and to insure that an adequate supply of reasonably priced electricity is available to meet the region's electric needs. Moreover, the proposed project has been undertaken in a manner that will have little or no effect upon the environment. This proposed project is extremely limited in scope and impact. It involves adding limited equipment without expanding the substation fence. In fact, to the extent that it reduces the need to run local generation, it will result in a reduction of air emissions that would otherwise be produced and may produce substantial cost savings (see finding 69, below). VELCO Panel pf. at 17.

25. The proposed project is in context with its surroundings, since the portable transformer is to be installed in a substation adjacent to the two other existing substations, a water transmission facility, a railroad and an industrial zone. The substation is very well screened so it is not readily visible in winter and in the summer is essentially fully screened. Boyle pf. at 4.

26. VELCO notified the Chittenden Regional Planning Commission about the proposed project on January 3, 2001 (VELCO Exh. DMJ- 14) and received no negative comments or concerns. VELCO Panel pf. at 18.

27. VELCO also notified the City of South Burlington Development Review Board on January 3, 2001 (VELCO Exh. DMJ - 15) and met with them on February 6, 2001. The City of South Burlington Development Review Board expressed no negative comments or concerns to VELCO. VELCO Panel pf. at 18.

Need For Present and Future Demand for Service

[30 V.S.A. § 248(b)(2)]

28. The proposed project is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost effective manner through energy conservation programs and measures and energy efficiency and load management measures. This finding is supported by findings 29 through 46, below.

29. The proposed second 115/34.5 kv transformer is needed at the VELCO Queen City Substation to prevent overloading of the Chittenden County Transformers during the upcoming year 2001 summer heavy load period. VELCO Panel pf. at 4.

30. Increased load growth, an expected reduction in the economic dispatch of the McNeil generating plant beginning in May of 2001, plus the age and uncertain condition of the Chittenden County Transformers, all contribute to VELCO's concerns about the three transformers. A failure of one of these units, at statewide load levels of 700 MW or greater, presents a risk of overloading the remaining two transformers, which could cause a second unit to fail. The failure of two units would likely result in an extensive outage in Chittenden County. VELCO Panel pf. at 4.

31. The number of hours Vermont is seeing higher summer peak loads has been steadily increasing (at a rate of approximately 2% annually) since 1993. Much of this is driven by Chittenden County's summer load growth which, at an annual rate of almost 4%, is double that of the rest of the state. *See* Docket No. 6252, Order of 10/8/99, at findings 39-41; VELCO Panel pf. at 4; VELCO Exh. DMJ-5.

32. In 1999, VELCO observed that this substantial summer loading was creating voltage problems on the transmission system serving Chittenden County. To address the situation, VELCO obtained a Certificate of Public Good from the Board in October of 1999 to install and operate a FACTS (Flexible AC Transmission System) device at VELCO's Essex Substation located in Williston, Vermont. Docket No. 6252, Order of 10/8/99. VELCO Panel pf. at 4-5.

33. The FACTS device is scheduled to become operational May 1, 2001. Pet. at 3.

34. Pending completion of the FACTS project, VELCO has relied upon the McNeil generating unit and other local generation during periods of heavy loading for transmission voltage support and transmission system reliability. Since May of 1999, McNeil has been dispatched approximately 90% of the time, half of this time for VELCO reliability, and half by the Independent System Operator of New England ("ISO-NE") for economic dispatch. VELCO Panel pf. at 5.

35. Once VELCO's FACTS device is commissioned in May of 2001, the requirement to run the McNeil unit out-of-merit for VELCO's transmission network reliability will be significantly

reduced.¹ VELCO estimates that McNeil will be economically dispatched approximately 50% of the time during the summer of 2001. VELCO Panel pf. at 5.

36. VELCO expects that McNeil will be running during the summer of 2001 at its rated capacity during periods of high Vermont electrical load, and that this will occur coincident with the hours when VELCO needs local generation to prevent transformer overloading.² However, should McNeil or other local generation be unavailable during high load periods, the Chittenden County Transformers will be loaded at or above their nameplate ratings. VELCO Panel pf. at 5-6; VELCO Exh. DMJ-6.

37. The Chittenden County Transformers, due to their age, may be more prone to failure from such overloading. The two Essex Substation transformers are 37 years old (with one rebuilt in 1985) and the Queen City Substation transformer is 24 years old. VELCO Panel pf. at 6.

38. Because local generation has historically been running during high load periods, these Chittenden County Transformers have been loaded above 40 MW infrequently. However, analysis of oil in the transformers has shown evidence of "gassing" due to overheating. This suggests that the insulation in the transformers has been stressed and that transformer overload should be avoided.³ VELCO Panel pf. at 6.

39. Outages on GMP's 34.5 kv line could also cause an overload on VELCO's Chittenden County Transformers during heavy load periods. VELCO Panel pf. at 8.

40. If one of the three Chittenden County Transformers fails, the two remaining units will pick up the load. At load levels above 700 MW and with McNeil off line, one such failure will cause the two remaining transformers to be loaded in excess of the their nameplate rating. This

1. Out-of-merit refers to the running of a generator whose bid price is higher than the clearing price during a particular hour. ISO-NE has the option of running units out-of-merit to maintain reliability. VELCO Panel pf. at 5, n.1.

2. VELCO estimates that McNeil will be needing approximately 1,000 to 1,640 hours during the summer of 2001 to prevent transformer overloading. VELCO estimates that McNeil's capacity factor will be between 50% to 60% for 2001. This translates to approximately 1,800 to 2,200 hours of run time in the summer of 2001. It is quite likely that McNeil will be economically dispatched when VELCO needs the generation to prevent Chittenden County Transformer overloads. VELCO Panel pf. at 6, n.2; VELCO Exh. DMJ-6.

3. Over time, excessive cycling or overloading of a transformer generates heat and can lead to the development of "hot spots" and potential arcing within a transformer's insulation. This introduces stress to the insulation and can cause transformer failure. VELCO Panel pf. at 6, n.3.

increases the potential for the loss of life in the two remaining units and a chance of a second transformer failure. VELCO Panel pf. at 7.

41. Vermont's load was at or above 700 MW over 48% of the hours during the summer of 2000. VELCO Panel pf. at 7, n.4.

42. In the event of a Chittenden County Transformer failure, VELCO would have to move its portable substation transformer from the Middlebury Substation to either the Queen City or Essex Substations on an emergency basis. Such a move and installation would require approximately 72 hours. VELCO Panel pf. at 7.

43. To avert Chittenden County Transformer overloading during the time the portable was being moved, Chittenden County generation (Burlington gas turbine-20 MW, Gorge gas turbine-11.65 MW, Vergennes diesel-4.2 MW, and Essex diesels-4.2 MW) would be called to run while McNeil was ramped up. If some or all of this generation failed to run during peak load periods, it is possible, depending upon the load level, that manual load shedding would be implemented to reduce the loading on the remaining two Chittenden County Transformers. VELCO Panel pf. at 7.

44. The loss of a second Chittenden County Transformer would likely cause an extensive outage in Chittenden County. At high load levels, all of the local generation would be required. At peak load levels, even with all of the local generation running, rotating blackouts might be required to maintain the loading on the remaining two transformer within acceptable limits. VELCO Panel pf. at 7-8.

45. To minimize the exposure of these Chittenden County Transformers to overload conditions, VELCO proposes to install the portable transformer at the Queen City Substation by May 4, 2001. Installation by May 4, 2001 is proposed because the FACTS device is scheduled to be operational in May, and there is expected to be a significant reduction in the number of hours that the McNeil generating plant will be run in support of the 115 kv system. The May deadline is important also because May-June is the beginning of the Chittenden County summer peak period. VELCO Panel pf. at 10.

46. The portable transformer would be installed in "hot standby" mode, which is a configuration where the transformer's high and low side breakers are open. The breakers are

remotely controlled and can be quickly closed (within a minute or two) as needed. During peak periods, if McNeil or one of the Chittenden County Transformers is unavailable, the portable transformer at Queen City would be energized. This configuration reduces the exposure of the remaining two transformers to overloading if one is lost, and it reduces the number of hours McNeil is needed to off-load the Chittenden County Transformers. VELCO Panel pf. at 9-10.

System Stability and Reliability

[30 V.S.A. § 248(b)(3)]

47. The proposed project is necessary to ensure system stability and reliability, and will not adversely affect system stability and reliability. This finding is supported by findings 29 through 46, above.

Economic Benefit to the State

[30 V.S.A. § 248(b)(4)]

48. The proposed project will result in an economic benefit to the State. This finding is supported by findings 49 through 55, below.

49. The total cost of the proposed project is estimated to be \$70,000.00. This estimate includes the cost of moving and installing the portable transformer, breaker and control package at the VELCO Queen City Substation (\$49,000.00) and reconductoring GMP's 34.5 kV line (\$21,000.00). VELCO Panel pf. at 14.

50. The proposed installation of a second 50 MVA transformer at the VELCO Queen City Substation will achieve cost savings if the cost to run local generation "out of merit" is greater than the cost to install the proposed transformer. Vermont's "out of merit" generators could include McNeil, the Burlington, Gorge and Berlin gas turbines and the Essex diesels. VELCO Panel pf. at 15.

51. If McNeil is unavailable during peak load hours, causing an overloading of the Chittenden County Transformers, the local gas turbines and diesels would be run. The same operating scenario would occur where pre-contingency, Chittenden County generation is not running and one of the Chittenden County Transformers fails. Under this latter scenario, at load levels above 700 MW, VELCO would require local generation to run to prevent overloads on the remaining two Chittenden County Transformers. VELCO Panel pf. at 15.

52. Under either scenario (described in finding 51 above and assuming an incremental cost to must-run these units) was an average of \$50/MWh above the clearing price, society will have paid an amount equal to the cost of the proposed portable transformer installation in as little as 35 hours.⁴ VELCO Panel pf. at 15.

53. If the VELCO system required generation to run that did not clear the market, then the cost to run the generation would become a reliability-must-run cost that today would be socialized throughout New England. In the future, perhaps as soon as the end of 2001, these costs could be borne solely by Vermont entities. In this case, the cost of must-running Chittenden County generation would be borne by GMP. VELCO Panel pf. at 16.

54. Even if it never becomes necessary to run generation out-of-merit to protect the Chittenden County Transformers, the proposed project provides an economic benefit by providing customers a significant level of assurance of increased reliability. VELCO Panel pf. at 16.

55. The proposed project provides an economic benefit by avoiding the costs to customers and the state that would be incurred as a result of rolling blackouts and extended outages. These costs are not readily quantifiable, but would certainly be significant. VELCO Panel pf. at 16.

Aesthetics, Historic Sites, Air and
Water Purity, the Natural Environment and Public
Health and Safety

[30 V.S.A. § 248(b)(5)]

56. The project as proposed will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment and the public health and safety. This finding is supported by findings 57 through 91, below, which are based on the criteria specified in 10 V.S.A. §§ 1424a(d) and 6086(a)(1) through (8), 8(A) and (9)(K).

Outstanding Resource Waters

[10 V.S.A. § 1424a(d)]

4. As stated in Finding No. 49 above, the estimated cost of installing the portable transformer is \$70,000. 40 MW running 35 hours at \$50/MWh incremental cost equals \$70,000. This \$50/MWh incremental cost is a conservative estimate. It assumes a bid price of \$150/MWh for the generation. The Chittenden County gas turbines have typically bid in excess of \$150/MWh. It also assumes a clearing price of \$100 MWh (10 cents/kWh). It is likely that the actual bid price of the GTs would be higher increasing the incremental cost and making the payback period on the cost of installing the portable transformer even shorter.

57. The proposed project will have no undue impact on any known outstanding resource waters of the state as identified by the Water Resources Board. VELCO Panel pf. at 19.

Water and Air Pollution

[10 V.S.A. § 6086(a)(1)]

58. The project as proposed will not result in undue water or air pollution. This finding is supported by findings 59 through 70, below.

Headwaters

[10 V.S.A. § 6086(a)(1)(A)]

59. There are no headwaters in the vicinity of the site. VELCO Panel pf. at 20.

Waste Disposal

[10 V.S.A. § 6086(a)(1)(B)]

60. The proposed project will meet all applicable health and environmental conservation regulations regarding the disposal of wastes. There will be no injection of waste materials or harmful toxic substances into the ground waters or wells, nor will there be any brush removal. VELCO Panel pf. at 19.

61. There will be little or no construction debris. Construction debris, if any, will be disposed of at an approved landfill. VELCO Panel pf. at 20.

Water Conservation

[10 V.S.A. § 6086(a)(1)(C)]

62. Except for the use of water as necessary to control dust from construction vehicles, the proposed project will not require the use of water during or after construction. VELCO Panel pf. at 19, 20.

Floodways

[10 V.S.A. § 6086(a)(1)(D)]

63. The VELCO Queen City Substation is not located in a flood plain. VELCO Panel pf. at 20.

Streams

[10 V.S.A. § 6086(a)(1)(E)]

64. No rivers or streams will be traversed or adversely impacted by this proposed project. VELCO Panel pf. at 20-21.

Shorelines

[10 V.S.A. § 6086(a)(1)(F)]

65. No shorelines will be traversed or adversely impacted by this proposed project. VELCO Panel pf. at 20-21.

Wetlands

[10 V.S.A. § 6086(a)(1)(G)]

66. The VELCO Queen City Substation is not located in wetland. VELCO Panel pf. at 20.

Air Pollution

[10 V.S.A. § 6086(a)(1)]

67. The proposed project will not result in unreasonable air pollution because there are no incremental impacts to air quality from the proposed installation of the portable transformer. Any impact associated with this criterion would be minor, temporary in nature, and associated with minimal dust caused by vehicles during construction. VELCO Panel pf. at 19.

68. Traffic impacts to the VELCO Queen City Substation will be limited to installation. During construction, dust will be controlled by the application of water or calcium chloride, as required. VELCO Panel pf. at 19.

69. To the extent that the proposed project displaces the need to must-run local generation, the proposed project will result in the avoidance of air emissions from fossil-fueled generation. See findings 50-53, above.

70. Currently, the existing substation site holds two transformers (one 115/13.8 kV transformer and one 115/34.5 kV transformer). The proposed addition of a second 115/34.5 kV transformer should not result in significant additional noise. The portable transformer will be operated in stand-by mode and connected only when one of the three Chittenden County Transformers fails or when loads are high and local generation is not running. VELCO Panel pf. at 19.

**Sufficiency of Water And Burden on
Existing Water Supply**

[10 V.S.A. § 6086(a)(2)(3)]

71. The proposed project will not use any significant amounts of water and will not place a burden on any existing water supply. VELCO Panel pf. At 19,20; see finding 62, above.

Soil Erosion

[10 V.S.A. § 6086(a)(4)]

72. The proposed project will not result in unreasonable soil erosion or reduce the ability of the land to hold water. This finding is supported by findings 73-74, below.

73. There will be no soil erosion at the subject substation site. Any excavated soil will be distributed outside the fence line, graded and re-seeded. The soil will be replaced with crushed rock within the parameter of the substation. VELCO Panel pf. at 21.

74. Vehicular access to the subject substation will be via the existing access road and parking area adjacent to the substation. Temporary erosion control measures will be implemented during the proposed construction to minimize erosion. These measures, which VELCO will require of the contractor, will comply with standards from the Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites. VELCO Panel pf. at 21.

Traffic

[10 V.S.A. § 6086(a)(5)]

75. The proposed project will not cause unreasonable congestion or unsafe conditions with respect to transportation systems, in that the proposal is to upgrade transmission equipment and facilities at an existing, unmanned substation site. VELCO Panel pf. at 22.

76. Traffic congestion, if any, during the proposed installation will be kept to a minimum since most of the proposed construction will take place at the existing substation site and away from busy town streets and state highways. Construction vehicles will park at the existing parking lot adjacent to the subject substation site. VELCO Panel pf. at 22.

77. Moving the portable transformer from Middlebury to South Burlington is a limited duration event that will require an oversize load permit and possibly an escort. VELCO will

obtain the necessary permit and provide for any necessary escort, in compliance with all state and federal regulations. VELCO Panel pf. at 22.

Educational Services

[10 V.S.A. § 6086(a)(6)]

78. The proposed installation of a second transformer and associated equipment at the VELCO Queen City Substation will have no impact on educational services. VELCO Panel pf. at 22.

Municipal Services

[10 V.S.A. § 6086(a)(7)]

79. The proposed installation of a second transformer and associated equipment at the VELCO Queen City Substation will have no impact on municipal services. VELCO Panel pf. at 22.

**Aesthetics, Historic Sites or Rare
And Irreplaceable Natural Areas**

[10 V.S.A. § 6086(a)(8)]

80. The proposed project will not have an undue adverse effect on the scenic or natural beauty, aesthetics, historic sites or rare and irreplaceable natural areas. This finding is supported by findings 81-87, below.

81. The proposed transformer and associated equipment installation will be installed within the existing fence of the VELCO Queen City Substation and will not require the construction of any additional lines. VELCO Panel pf. at 18.

82. Since all activity for this proposed project will remain within the current fence line and on the existing VELCO right-of-way, the amount of newly disturbed soils will be minimal. The only soil disturbance outside of the existing fence will be from the replacement of an existing GMP pole and the proposed installation of a new pole approximately thirty feet outside of VELCO's existing fence under the existing GMP line. Therefore, no trees, real estate, historical sites, or other natural environment will be disturbed. VELCO Panel pf. at 18.

83. The proposed addition of the portable transformer to the VELCO Queen City Substation will not have an adverse aesthetic impact. The proposed project is within the context of the area,

since the proposed transformer installation is in an existing substation adjacent to two other existing substations, a water transmission facility, a railroad and an industrial zone. The existing substation is also very well screened on all sides. It is not readily visible in the winter and in the summer is essentially fully screened. Boyle pf. at 4; VELCO Exhs. TJB - 2, 3A, 3B, 3C.

84. The subject substation yard is well screened on all sides from existing roads and neighbors. There is a substantial existing evergreen and deciduous woods between Queen City Park Road and the subject substation site. Although the evergreens are thin in places because they have lost their lower limbs, there is a substantial density of deciduous stems and brush and trees. It is very difficult to see the existing substation structure or fence because of the lattice type steel structure and similarity in scale and color to the many tree stems. Boyle pf. at 2-3.

85. The tan color of the existing control house is barely discernible. Boyle pf. at 3.

86. The proposed project is in context with other uses in the area and it is an integral part of a previously approved 248 project (Queen City Tap). Boyle pf. at 4.

87. There are no known historic sites or rare or irreplaceable natural areas in the area of the proposed installation. VELCO Panel pf. at 18.

Discussion

Based on the above findings, the Board finds that this proposed project will not have an undue adverse effect on the aesthetics or scenic and natural beauty of the area. In reaching this conclusion, the Board has relied on the Environmental Board's methodology for determination of "undue" adverse effects on aesthetics and scenic and natural beauty as outlined in the so-called Quechee Lakes decision. Quechee Lakes Corporation, #3W0411-EB and 3W0439-EB, dated January 13, 1986.

As required by this decision, it is first appropriate to determine if the impact of the proposed project will be adverse. The proposed project would have an adverse impact on the aesthetics of the area if its design is out of context or not in harmony with the area in which it is located. If it is found that the impact would be adverse, it is then necessary to determine that such an impact would be "undue". Such a finding would be required if the proposed project violates a clear written community standard intended to preserve the aesthetics or scenic beauty of the area,

if it would offend the sensibilities of the average person, or if generally available mitigating steps will not be taken to improve the harmony of the proposed project with its surroundings.

Given the facts of this case, it would be difficult to find that this proposed project would have an adverse effect on the aesthetics of the area because of the limited nature of the proposal, and the fact that it will be located within an existing substation site.

Even if the Board were to find this proposal aesthetically adverse, it would not be able to find that such adverse impact is undue because there is no written community standard that would be violated, the proposed project will not offend the sensibilities of the average person, and the high density of vegetative screening around the existing substation would provide sufficient mitigation.

**Necessary Wildlife Habitat and
Endangered Species**

[10 V.S.A. § 6086(a)(8)(A)]

88. The proposed project does not traverse any designated natural areas or impact endangered species that so far have been identified on city and state maps. VELCO Panel pf. at 20-21.

Development Affecting Public Investments

[10 V.S.A. § 6086(a)(9)(K)]

89. The proposed facilities will not endanger the public or quasi-public investments in any governmental public utility facilities, services, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use or enjoyment of or access to such facilities, services, or lands. By improving reliability of electric service to the area, the proposed project will have a positive impact upon such facilities, services, or lands. VELCO Panel pf. at 22-23.

Public Health and Safety

[30 V.S.A. § 248(b)(5)]

90. The proposed project will be constructed in accordance with the National Electrical Safety Code. VELCO Panel pf. at 21.

91. The minimal nature of the proposed project is such that it will be consistent with and will maintain the existing condition of the subject substation site, and will not endanger the health, safety, welfare of the public, or adjoining landowners. VELCO Panel pf. at 21.

Compliance With Electric Energy Plan

[30 V.S.A. § 248(b)(7)]

92. The project as proposed is consistent with the Vermont 20-Year Electric Plan. The DPS has determined, in a letter dated March 27, 2001, that the proposed project is consistent with the Vermont 20-Year Electric Plan in accordance with 30 V.S.A. § 202(f), provided that the petitioner's actions in this matter are consistent with the petition and testimony. DPS Section 202(f) Determination.

Outstanding Water Resources

[30 V.S.A. § 248(b)(8)]

93. No waters of the state that have been designated as Outstanding Resource Waters will be affected by the proposed project. Finding 57, above.

Existing Transmission Facilities

[30 V.S.A. § 248(b)(10)]

94. The proposed project will have no adverse affect on Vermont customers or utilities and, in fact, will improve reliability of existing service to GMP and BED and their retail customers by avoiding Chittenden County Transformer overloading and possible extended outages and blackouts in Chittenden County. VELCO Panel pf. at 23.

III. CONCLUSION

Based upon all of the above evidence, the proposed construction will be of limited size and scope; the petition does not raise a significant issue with respect to the substantive criteria of 30 V.S.A. § 248; the public interest is satisfied by the procedures authorized in 30 V.S.A. § 248(j); and the proposed project will promote the general good of the state.

IV. ORDER

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that the installation of VELCO's 115/34.5 kv, 50 MVA portable transformer at VELCO's Queen City Substation located in the City of South Burlington, Vermont, and the reconductoring of approximately 600 feet of GMP's existing 34.5 kv transmission line which connects VELCO's Queen City Substation to GMP's Substation #32, located in the City of South Burlington, Vermont, will promote the general good of the State of Vermont in accordance with 30 V.S.A. § 248, and a certificate of public good shall be issued in this matter.

Dated at Montpelier, Vermont, this 11th day of April, 2001.

<u>s/Michael H. Dworkin</u>)	
)	PUBLIC SERVICE
)	
<u>s/David C. Coen</u>)	BOARD
)	
)	OF VERMONT
<u>s/John D. Burke</u>)	

OFFICE OF THE CLERK

FILED: April 11, 2001

ATTEST: s/Susan M. Hudson

Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or mail) of any technical errors, in order that any necessary corrections may be made. (E-mail address: Clerk@psb.state.vt.us)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.